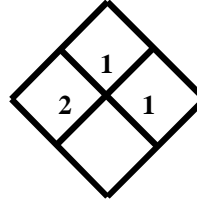


4917 Dawn Avenue
East Lansing, MI 48823-5691

8am to 5pm Phone: (517) 351-5900
24-Hour Emergency Phone: 1-888-354-3323

Effective Date: 1/20/04**Material Safety Data Sheet**

MSDS No: 34632

1. PRODUCT IDENTIFICATION**Trade Name:** RenCast 6492**Chemical Family:** Isocyanate

NFPA RATING

Health:	2*
Flammability:	1
Reactivity:	1
Personal Protection:	

HMIS RATING

Intended Use or Product Type: Polyurethane resin**2. COMPOSITION / INFORMATION ON INGREDIENTS**

O S H A	CAS No.	CHEMICAL IDENTITY	EXPOSURE LIMITS				CARCINOGEN STATUS			
			ACGIH		OSHA		MFR.	IARC	NTP	OSHA
			TWA	STEL	PEL	STEL				
*	101-68-8 Common Name:	Benzene, 1,1'-Methylenebis[4-Isocyanato-MDI	0.005 ppm	NE	0.02 ppm	NE	NE	NR	NR	NR
*	25686-28-6 Common Name:	Benzene, 1,1'-Methylenebis[4-Isocyanato-, Homopolymer Modified MDI	NE	NE	NE	NE	NE	NR	NR	NR
*	26447-40-5 Common Name:	Benzene, 1,1'-Methylenebis[Isocyanato-Diphenylmethane diisocyanate	NE	NE	NE	NE	NE	NR	NR	NR
*	115-96-8 Common Name:	Ethanol, 2-Chloro-, Phosphate (3:1) Chlorinated phosphate ester	NE	NE	NE	NE	NE	NR	NR	NR

NE = Not Established NR = Not Reviewed * = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION

Emergency Overview: Causes irritation if inhaled and can cause skin irritation, eye irritation, allergic respiratory reaction, and allergic skin reaction. Can be harmful if swallowed.

Primary Route(s) of Entry: Dermal; heated product may produce inhalable vapors.

Effective Date: 1/20/04

4. FIRST AID MEASURES

Ingestion: If conscious, give 2 - 4 glasses of water to drink. Do not induce vomiting. Call a physician.

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes.

Inhalation: Remove to fresh air. Call a physician.

Eyes: Immediately flush eyes with water for at least 15 minutes. Call a physician.

Overexposure Effects: Contact with liquid causes eye and skin irritation. If inhaled causes breathlessness, chest discomfort, and reduced pulmonary function. May cause allergic skin and respiratory reactions in some individuals, leading to asthma type spasms of the bronchial tubes and difficulty in breathing. Ingestion (ethanol, 2 chloro, phosphate) can cause harm to the central nervous system.

Medical Conditions Aggravated by Exposure: Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases, eye conditions or recurrent skin eczema or sensitization should be excluded from working with isocyanates.

Additional Information: Referral to a physician is recommended if there is any question about the seriousness of any injury.

5. FIRE FIGHTING MEASURES

Flash Point:	> 350°F (> 177 °C)
Flash Point Method Used:	PMCC
Flammable Limits in Air (Lower - % by volume):	Not established
Flammable Limits in Air (Upper - % by volume):	Not established

Fire Fighting Extinguishing Media: Carbon dioxide, dry chemical, foam, water.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Remove spillage by absorbing in absorbent material.

7. HANDLING AND STORAGE

Signal Word: Warning!

Precautions: Causes irritation if inhaled and can cause skin irritation, eye irritation, allergic respiratory reaction, and allergic skin reaction. Can be harmful if swallowed. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Avoid tasting or swallowing. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

Effective Date: 1/20/04

Other Handling Information: Nuisance dust may be generated when sanding or sawing cured material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Skin Protection: Wear impermeable gloves.

Respiratory Protection: If a person is concerned with exposure to isocyanates, an organic respirator can provide protection at less than the TLV. It is not a requirement at an exposure level less than the TLV. For exposures in excess of the TLV, an air supplied respirator would be required. Conditions that may create exposures above the TLV are spray applications, the material being strongly heated in excess of 125F before application, or the use of material in poorly ventilated areas.

Eye Protection: Wear splash-proof chemical goggles.

Engineering Controls: General mechanical and local exhaust in accordance with ACGIH recommendations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Amber
Physical State:	Liquid
Solubility in Water:	Reacts with water
Vapor Pressure:	0.0002 mm Hg at 25°C (77 °F)
Specific Gravity:	1.22 - 1.24 (water = 1)
Boiling Point:	Not Determined
Evaporation Rate:	Not Determined
Vapor Density:	> 1 (Air = 1)
pH:	Not Determined

Percent Volatile: Negligible.

10. STABILITY AND REACTIVITY

Conditions to Avoid: Excessive heat for prolonged periods of time.

Stability: Stable.

Incompatibility: Strong oxidizers, acids and bases.

Hazardous Decomposition Products: Combustion may form toxic materials, such as carbon dioxide, carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral Effects (LD50): Component(s) are slightly toxic, 500 - 5000 mg/kg (rat).
Ethanol, 2-chloro-, phosphate (3:1)= 550 mg/kg (rat)

Acute Inhalation Exposure Effects: Respiratory irritant.

Effective Date: 1/20/04

Sensitization: May cause allergic skin reaction and respiratory sensitivity in some people.

Skin Irritation: Irritant.

Eye Irritation: Irritant.

12. ECOLOGICAL INFORMATION

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Consult qualified local or corporate personnel for method that will comply with local, state and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT: Non-Bulk

Proper Shipping Name: Resin compounds, N.O.I.

Department of Transportation: Not regulated as a hazardous material by the U.S. Dept. of Transportation (DOT) 49 CFR 172.101 hazardous materials table.

15. REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety and Health Act (OSHA): This Material Safety Data Sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard.

Resource Conservation and Recovery Act (RCRA): Not specifically listed as hazardous waste under RCRA (40 CFR 261). However, it is strongly recommended that compound be treated as a hazardous waste and disposed of accordingly.

SARA Title III: Section 313 Toxic Chemical List (TCL): This product contains a toxic chemical(s) for routine annual toxic chemical release reporting under section 313 (40 CFR 372). This information must be included in all MSDS's copied or distributed for this material.

Chemical Name: Benzene, 1,1'-Methylenebis[4-Isocyanato-

Common Name: MDI

Percent in Composition: 67.5 % by wt

Comment:

TSCA Section 8(b) - Inventory Status: Chemical components listed on TSCA Inventory.

TSCA Section 12(b) - Export Notification: This product does not contain any chemical(s) that are subject to a Section 12(b) export notification.

Effective Date: 1/20/04

State Regulations:**Pennsylvania Right-to-Know:** The following is required composition information:

Chemical Name: Benzene, 1,1'-Methylenebis[4-Isocyanato-
Common Name: MDI
CAS Number: 101-68-8
Comment: Environmental Hazardous Substance

Chemical Name: 1,1'-Methylenebis(4-Isocyanatobenzene) Homopolymer
Common Name: Modified MDI
CAS Number: 25686-28-6
Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Ethanol, 2-Chloro-, Phosphate (3:1)
Common Name: Chlorinated phosphate ester
CAS Number: 115-96-8
Comment: Not on Pennsylvania Hazardous Substance List

16. OTHER INFORMATION

MSDS No: 34632
Approved By: Dianne Blessing
Title: EH&S Specialist

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P.O. Box 4980

The Woodlands, TX 77387-4980

8 am to 5 pm Phone: (800) 257-5547

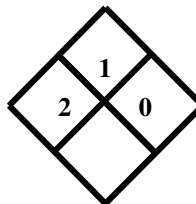
24-Hour Emergency Phone: (800) 328-8501

International Emergency Phone: (409) 727-0831

Asia Pacific Emergency Phone: (65) 6336-6011

Effective Date: 9/20/10**Material Safety Data Sheet**

MSDS No: 34633

1. PRODUCT IDENTIFICATION**Trade Name:** Ren 6492 US**Chemical Family:** Amine Based Polyol

NFPA RATING

Health:	2
Flammability:	1
Reactivity:	0
Personal Protection:	

HMIS RATING

Intended Use or Product Type: Polyurethane**2. COMPOSITION / INFORMATION ON INGREDIENTS**

O S H A	CAS No.	CHEMICAL IDENTITY	EXPOSURE LIMITS				CARCINOGEN STATUS			
			ACGIH		OSHA		MFR.	IARC	NTP	OSHA
			TWA	STEL	PEL	STEL				
*	102-60-3 Common Name: Concentration	2-Propanol, 1,1',1'',1'''-(1,2-ethanediyldinitrilo)tetrakis-Amine based tetrol 5.00 - 10.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	1313-59-3 Concentration	Sodium Oxide 1.00 - 5.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	1344-28-1 Common Name: Concentration	Aluminum Oxide (Al ₂ O ₃) Alumina 1.00 - 5.00 % by wt	10 mg/m ³	NE	5 mg/m ³	NE	NE	NR	NR	NR
*	25791-96-2 Common Name: Concentration	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.',.alpha."-1,2,3-propanetriyltris[.omega.-hydroxy-Polyether triol 1.00 - 5.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	68333-79-9 Common Name: Concentration	Polyphosphoric Acids, Ammonium Salts Ammonium polyphosphate 5.00 - 10.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	7631-86-9 Common Name: Concentration	Silica Fumed Silica 1.00 - 5.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	9051-49-4	Poly(Oxy(Methyl-1,2-Ethanediyl)), .alpha.-Hydro-.omega.-Hydroxy,	NE	NE	NE	NE	NE	NR	NR	NR

Effective Date: 9/20/10

	Common Name: Concentration	Ether with 2,2-Bis(Hydroxymethyl)-1,3-Propanediol (4:1) Polyether polyol 30.00 - 60.00 % by wt								
*	9082-00-2 Common Name: Concentration	Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol Polyether triol 10.00 - 20.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	115-96-8 Common Name: Concentration	Ethanol, 2-Chloro-, Phosphate (3:1) tris(chlorethyl) phosphate 10.00 - 20.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR

NE = Not Established NR = Not Reviewed * = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION

Emergency Overview: Causes irritation if inhaled and can cause skin irritation, eye irritation, and allergic skin reaction. Can be harmful if swallowed.

Primary Route(s) of Entry: Dermal; heated product may produce inhalable vapors.

Chronic: Repeated overexposure may have effects on kidney and brain and may cause reproductive disorders.

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes. Seek immediate medical attention.

Inhalation: Remove to fresh air. Seek immediate medical attention.

Eyes: Immediately flush eyes with water for at least 15 minutes. Seek immediate medical attention.

Overexposure Effects: Causes irritation if inhaled and can cause skin irritation, eye irritation, and allergic skin reaction. Can be harmful if swallowed.

Medical Conditions Aggravated by Exposure: Skin, eye and pulmonary conditions.

Additional Information: Referral to a physician is recommended if there is any question about the seriousness of any injury.

5. FIRE FIGHTING MEASURES

Flash Point: > 110°C (> 230 °F)

Effective Date: 9/20/10

Flash Point Method Used:	Estimated
Flammable Limits in Air (Lower - % by volume):	Not established
Flammable Limits in Air (Upper - % by volume):	Not established

Fire Fighting Extinguishing Media: Carbon dioxide, dry chemical, foam, water.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Remove spillage by absorbing in absorbent material.

7. HANDLING AND STORAGE

Signal Word: Warning!

Precautions: Causes irritation if inhaled and can cause skin irritation, eye irritation, and allergic skin reaction. Can be harmful if swallowed. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Avoid tasting or swallowing. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

Other Handling Information: Nuisance dust may be generated when sanding or sawing cured material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Skin Protection: Wear impermeable gloves.

Respiratory Protection: Use NIOSH approved organic vapor cartridge respirator when vapor/mist exposure is likely.

Eye Protection: Wear splash-proof chemical goggles.

Engineering Controls: General mechanical and local exhaust in accordance with ACGIH recommendations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Cloudy
Color:	Off White
Physical State:	Liquid
Solubility in Water:	Soluble
Vapor Pressure:	Not Determined
Specific Gravity:	1.19 (water = 1)
Boiling Point:	Not Evaluated
Evaporation Rate:	Not Determined
Vapor Density:	Not Evaluated
VOC:	Negligible
pH:	Not Evaluated
Coefficient of water/oil:	Not Evaluated

Effective Date: 9/20/10

10. STABILITY AND REACTIVITY**Conditions to Avoid:** Excessive heat for prolonged periods of time.**Stability:** Stable.**Incompatibility:** Strong oxidizers, acids and bases.**Hazardous Decomposition Products:** Combustion may form toxic materials, such as carbon dioxide, carbon monoxide.**Hazardous Polymerization:** Will not occur.**11. TOXICOLOGICAL INFORMATION****Acute Oral Effects (LD50):** Component(s) are slightly toxic, 500 - 5000 mg/kg (rat).
Ethanol, 2-chloro-, phosphate (3:1)= 550 mg/kg (rat)**Acute Inhalation Exposure Effects:** Respiratory irritant.**Sensitization:** Possible in susceptible individuals.**Skin Irritation:** Irritant.**Eye Irritation:** Irritant.**12. ECOLOGICAL INFORMATION****13. DISPOSAL CONSIDERATIONS****Waste Disposal Method:** Consult qualified local or corporate personnel for method that will comply with local, state and federal health and environmental regulations.**14. TRANSPORT INFORMATION****DOT: Non-Bulk****Proper Shipping Name:** Not Regulated**IATA: Non-Bulk****Proper Shipping Name:** Not Regulated**IMDG: Non-Bulk****Proper Shipping Name:** Not Regulated**TDG: Non-Bulk****Proper Shipping Name:** Not Regulated**15. REGULATORY INFORMATION**

Effective Date: 9/20/10

US Federal Regulations:

Occupational Safety and Health Act (OSHA): This Material Safety Data Sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard.

Resource Conservation and Recovery Act (RCRA): Not a hazardous waste under RCRA (40 CFR 261).

SARA Title III: Section 313 Toxic Chemical List (TCL): This product contains a toxic chemical(s) for routine annual toxic chemical release reporting under section 313 (40 CFR 372). This information must be included in all MSDS's copied or distributed for this material.

Chemical Name: Aluminum Oxide (Al₂O₃)

Common Name: Alumina

Percent in Composition: 1 - 5 % by wt

Comment:

TSCA Section 8(b) - Inventory Status: All chemical components of this product are in compliance with TSCA inventory requirements.

TSCA Section 12(b) - Export Notification: This product does not contain any chemical(s) that are subject to a Section 12(b) export notification.

International Regulations:

Australian Inventory Status: This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances.

Canadian Inventory Status: This product contains only chemicals that are currently listed on the Canadian Domestic Substance List.

Canadian WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. D2A, D2B

European Inventory Status (EINECS): This product contains only chemicals that are currently listed on the European Inventory of Existing Commercial Chemical Substances (EINECS).

Japanese Inventory Status: This product contains one or more chemicals currently not on the Japanese Ministry of International Trade and Industry List of Existing and New Chemical Substances.

State Regulations:

California Proposition 65: The following is required composition information. This product contains the following chemical(s) which are currently listed on the California list of Known Carcinogens and Reproductive Toxins:

Chemical Name: Ethanol, 2-Chloro-, Phosphate (3:1)

Common Name: tris(chlorethyl) phosphate

CAS Number: 115-96-8

Percent in Composition: 10 - 20 % by wt

Comment: Warning! This chemical is known to the State of California to cause cancer.

Pennsylvania Right-to-Know: The following is required composition information:

Effective Date: 9/20/10

Chemical Name: Poly(Oxy(Methyl-1,2-Ethanediy)), .alpha.-Hydro-.omega.-Hydroxy, Ether with 2,2-Bis(Hydroxymethyl)-1,3-Propanediol (4:1)

Common Name: Polyether polyol

CAS Number: 9051-49-4

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Ethanol, 2-Chloro-, Phosphate (3:1)

Common Name: tris(chlorethyl) phosphate

CAS Number: 115-96-8

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol

Common Name: Polyether triol

CAS Number: 9082-00-2

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: 2-Propanol, 1,1',1",1'''-(1,2-ethanediyldinitrilo)tetrakis-

Common Name: Amine based tetrol

CAS Number: 102-60-3

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Polyphosphoric Acids, Ammonium Salts

Common Name: Ammonium polyphosphate

CAS Number: 68333-79-9

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Silica

Common Name: Fumed Silica

CAS Number: 7631-86-9

Comment: Hazardous Substance

Chemical Name: Aluminum Oxide (Al₂O₃)

Common Name: Alumina

CAS Number: 1344-28-1

Comment: Environmental Hazardous Substance

16. OTHER INFORMATION

MSDS No:	34633
Reason Issued:	9/10 updated
Approved By:	Matt Austin
Title:	EHS Chemist

Other Information: DLW/KBrR/CA1 (D10026731) [DF3]

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Effective Date: 9/20/10

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